

### **OPEN MEETING AGENDA ITEM**



RECLIE

1

3

4

5

## BEFORE THE ARIZONA CORPORATION COMMISSION

2

COMMISSIONERS
SUSAN BITTER SMITH, Chairman
BOB STUMP

BOB BURNS TOM FORESE

DOUG LITTLE

O CORP COMMISS COCKET CONTRO

Arizona Corporation Commission

DOCKETED

MAY 04 2015

DOCKETED BY

7C

6

8

9

10

11

12

13

7 IN THE MATTER OF THE APPLICATION OF SALT RIVER PROJECT

AGRICULTURAL IMPROVEMENT AND POWER DISTRICT, IN CONFORMANCE

WITH THE REQUIREMENTS OF

ARIZONA REVISED STATUTES, SECTIONS 40-360, et seq., FOR A

CERTIFICATE OF ENVIRONMENTAL

COMPATIBILITY AUTHORIZING THE PRICE ROAD CORRIDOR PROJECT, NON-

PRICE ROAD CORRIDOR PROJECT, NON-GILA RIVER INDIAN COMMUNITY

PORTION LOCATED IN THE CITY OF CHANDLER, ARIZONA OR WITHIN

MARICOPA COUNTY.

Docket No. L-00000B-15-0059-00170

Case No. 170

APPLICANT'S RESPONSE TO ARIZONA COMMUNITIES UNITED'S REQUEST FOR REVIEW OF SITING COMMITTEE'S DECISION

14

15

16

17

Applicant, Salt River Project Agricultural Improvement and Power District (SRP), files its response to the Arizona Communities United's Request for Review of the Siting Committee's decision, filed with the Arizona Corporation Commission (ACC) on April 17, 2015.

18

# **Preliminary Statement**

19

20

21

22

23

24

25

26

27

SRP respects the efforts and the concerns of the Chandler residents who make up Arizona Communities United. But, in the interest of all of SRP's customers, and in respect to the decision of the Siting Committee, SRP must strongly oppose the suggestion that a portion of the Project be placed underground.

In this response SRP first points out that the filing of Arizona Communities United does not meet the statutory requirements to file a request for review, as Arizona Communities United was not a party before the Siting Committee. For that reason SRP will treat the filing as public comment.

Next SRP provides an overview of the siting process. This includes a summary of the evidence presented to the Siting Committee on need and environmental impact.

Finally SRP sets out the reasons that the decision of the Siting Committee should be affirmed, and why the transmission line should not be constructed underground. In summary:

- 1. The Siting Committee chose the railroad alignment for several strong reasons. First, it is already a commercial corridor with an active railroad line. Second, there is a wide right of way to accommodate transmission. And third, there is an existing 69kV line along most of the corridor.
- 2. The Schrader Substation, much of the transmission, and the 69kV line along the railroad preceded development in the area, having been built when the area was farms. The homes in the Pine Lake Subdivision, which is the major driver of the Arizona Communities United Group, were built much later.
- 3. The new line will replace the existing 69kV poles. While the poles will be taller to accommodate the 230kV and 69kV circuits, the number of poles will be approximately half the existing number.
- 4. SRP currently has 456 circuit miles of 230kV transmission in its system. None of this is underground. It would be unfair to the residents and businesses near the other 230kV lines to ask them to pay the added cost to underground this part of the project.
- 5. The cost of undergrounding would be passed on to all SRP electric customers. The cost of undergrounding is approximately 11 times the cost of an overhead circuit. For the line segment from the Schrader Substation to the Gila River Indian Community boundary, this would increase project costs by approximately \$25 million.
- 6. Arizona law provides a mechanism for undergrounding electric lines, which is called an underground utility improvement district (A.R.S. § 48-620). Arizona Communities United is free to pursue the formation of an underground utility improvement district.

SRP respectfully requests that the Commission confirm the CEC issued by the Siting Committee.

#### Discussion

1. The Request for Review does not meet the statutory requirements.

The statutory process for siting power plants and transmission lines contemplates that the Commission review all Certificates of Environmental Compatibility issued by the Siting Committee (A.R.S. § 40-360.07(A)). Additionally the statutes provide for third party requests for review, which can in the Commission's discretion involve a more extensive review process.

This review process is set out in A.R.S. § 40-360.07:

A. No utility may construct a plant or transmission line within this state until it has received a certificate of environmental compatibility from the committee with respect to the proposed site, affirmed and approved by an order of the commission which shall be issued not less than thirty days nor more than sixty days after the certificate is issued by the committee, except that within fifteen days after the committee has rendered its written decision *any party* to a certification proceeding may request a review of the committee's decision by the commission.

*Emphasis supplied*. As indicated in the statutes the request must be made by a *party*. This makes sense as only parties to the hearing have the opportunity to present evidence and argument to the Committee (similar to the concept that only a party to a Superior Court action can file a notice of appeal).

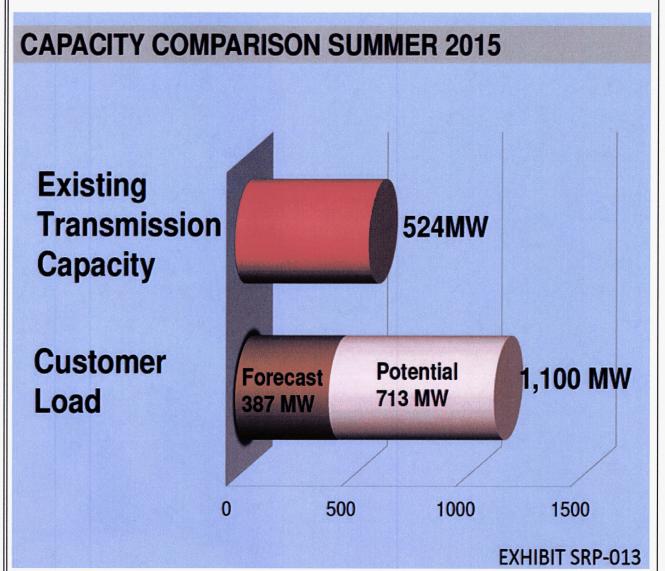
The organization called *Arizona Communities United* did not participate in any organized manner in the Committee hearings; in fact the organization may not have existed during the hearings. Several residents of nearby neighborhoods made public comment. But, none requested *party* status. For this reason the request for review is ineffective. Nonetheless, SRP will respond to the claims in the request, as though the filing were made as public comment.

# 2. The Project meets the statutory siting criteria.

The CEC Application before the Commission represents the culmination of 2 1/2-years of hard work and cooperation among many parties to identify and permit necessary infrastructure to support the continued growth of the Price Road Corridor (PRC). The PRC is a high tech hub home to companies like Wells Fargo, Intel, Orbital Sciences, Iridium, and Amkor Technology,

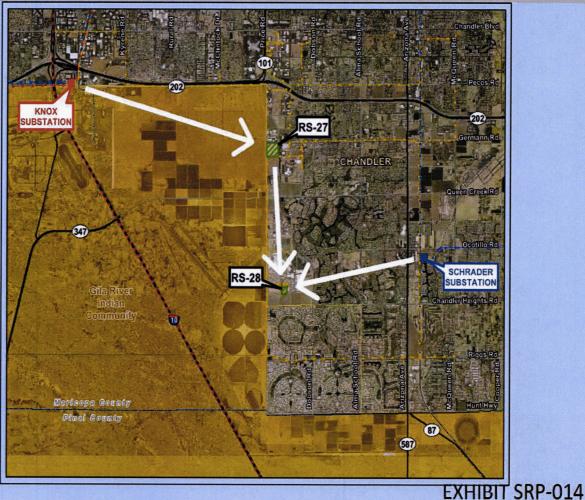
1
 2
 3

generating thousands of jobs for the Southeast valley and strengthening the economy of the State of Arizona. As set out in Exhibit SRP-013, growth in the PRC region will soon surpass the ability to serve the area:



The objective of the Price Road Corridor Project is to bring power from the existing Knox substation to the West and the existing Schrader Substation to the East to two new substations in the Price Road Corridor area. This concept is depicted in Exhibit SRP-014.

# PLANNED HIGH VOLTAGE POWER FLOWS INTO THE PRICE ROAD CORRIDOR AREA



SRP worked closely with the City of Chandler, the Gila River Indian Community (the Community), the Sun Lakes community and communities and residents throughout Chandler to find route alternatives that met the project needs and minimized the impact to the communities.

From the start of the project in 2011, SRP recognized that bringing a line through heavily populated areas of Chandler would present a challenge. To avoid major impacts, SRP pursued an alternative approach: to build the lines across sparsely populated areas of the Gila River Indian

Community. The logistics of locating the line on the Community lands were significant, and many believed that it was not possible.

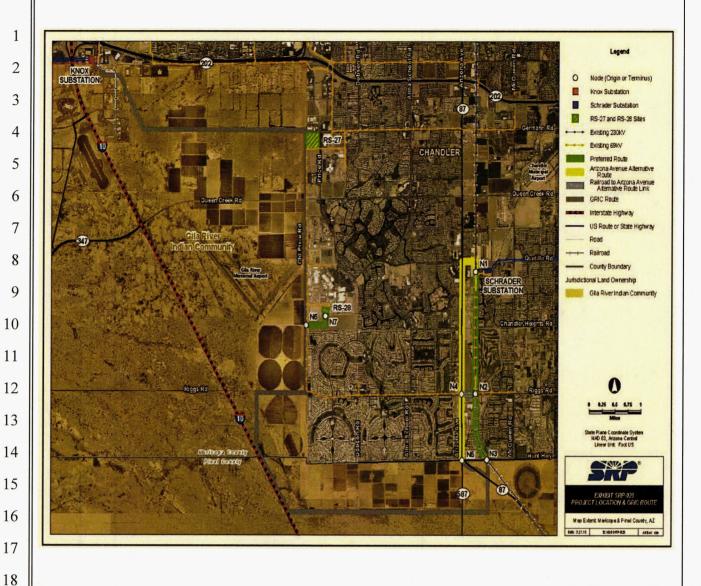
Attaining the alignment involved agreements and processes with the Community and the Gila River Indian Community Utility Authority. It involved federal approvals and processes. But most significantly it required the agreement of the majority of ownership of *each* of the 146 individually owned allotments crossed by the alignment.

SRP pursued this alternative by developing the routes as a joint project between the Community and SRP. Under the agreement the Community Utility (the Gila River Indian Community Utility Authority) would own the two 69kV positions on the 230kV structures. Additionally the Community would have the ability to use the right of way to build a free standing 12kV line. Not only does the project assist in the development of Community property, it could serve to provide transmission for a Tribal-owned utility scale solar project.<sup>1</sup>

The approvals for the Community alignments are close to final<sup>2</sup>. Most importantly (at least for this process) is that the Community routes avoid major impacts of private land options running from east to west that would have included the heavily populated residential areas along Germann Road and Hunt Highway. The entire Price Road Corridor Project including the Community segments is depicted on Exhibit SRP-025:

<sup>&</sup>lt;sup>1</sup> The Arizona Communities United group incorrectly assumes that the solar project would be owned by SRP.

<sup>&</sup>lt;sup>2</sup> The project on the Community lands is a joint project between SRP and the Tribe. The structures and rights of way will be co-owned so that they can be used by both entities, with the Community utility controlling the two lower positions for 69kV lines.



The success of the Community routes meant that only a few small segments of the Price Road Corridor project would be built on private land. These were the segments brought to the Siting Committee in this application<sup>3</sup>. At issue with the filing by Arizona Communities United is a relatively short segment (less than three miles) that links the Schrader Substation with the Community project. This segment is depicted in Exhibit SRP-022:

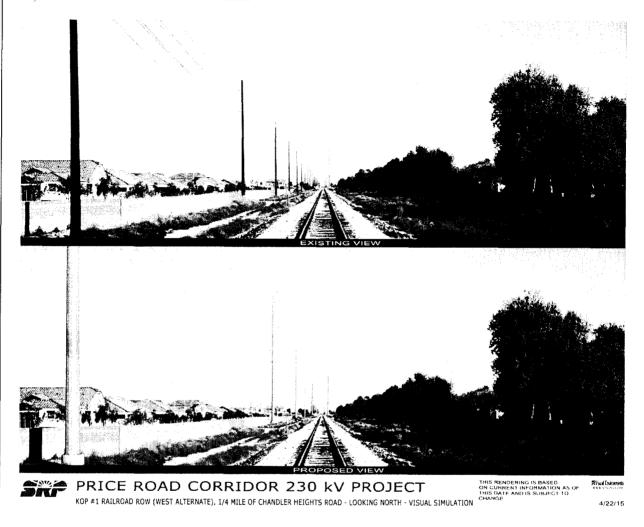
<sup>&</sup>lt;sup>3</sup> Because of tribal sovereignty the State of Arizona does not have jurisdiction to permit electrical facilities on tribal lands.



## 3. The Siting Committee appropriately chose the railroad alignment.

In its application SRP offered three alternative routes from Schrader to the Community boundary. On April 1, 2015, the Siting Committee on a vote of nine yeas and one abstention approved SRP's preferred alignment from the Schrader Substation to the Community boundary, referred to as the railroad route. This route offers a number of benefits over other route options and is considered the least impactful. First, the route will follow the Union Pacific Railroad tracks for its entire distance. Secondly, the project will replace an existing 69kV line; the new 230kV line will be co-located with the 69kV line. With the 230kV and 69kV circuits being co-located on one set of structures, approximately half the number of poles will be needed. The combined line will require fewer, albeit taller, structures. Here is a simulation, prepared after the

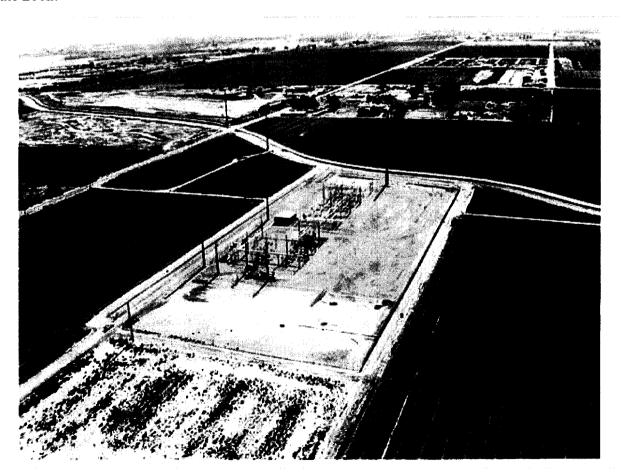
fact, of the before and after condition:



In its April 17, 2015, pleading, Arizona Communities United takes no issue with the route approved by the Siting Committee and "feels that the Union Pacific railroad track route option is the best option as it will create the least amount of disruption to the community during construction and future maintenance". During the siting hearings, the railroad route received support from the intervenors that had an interest in this portion of the line, City of Chandler and Sun Lakes Community SRP Legal Fund. Similarly, other community organizations filed letters in support of the railroad route, including Fulton Homes, D.R. Horton Properties and the Germann Action Team, an organization of residents and landowners who live or work along the Germann Corridor (Germann, Dobson and Ellis Roads).

While supportive of the preferred alternative, the Arizona Communities United argues that the line should be placed underground. This request should be rejected for several reasons.

First, the Schrader Substation and associated transmission lines preceded the residential development in the area. In other words, people purchased homes in developments next to the existing substation and at least a portion of the lines. Specifically, the Schrader Substation and another 230kV line that exits the Substation to the north were developed in the 1996 to 1997 time frame, when the area was farmland. The photo below shows the Schrader Substation and the surrounding area in January 1998. The 69kV line, which will be replaced by the new structures, pre-dated Schrader, as the line was built to serve the Sun Lakes development in the 1960s. Residential communities around the Schrader Substation did not begin to develop in the area until late 2002.



Second, undergrounding involves very significant added expense, expense that would be borne by all SRP electric customers. The cost to underground the railroad route is approximately \$11.6 million per mile per circuit adding approximately \$25 million to the cost of the Project. This estimate was developed based on an analysis done by SRP engineers after receiving estimates from material suppliers and engineering consultants. It includes the cost of materials, engineering, construction and the easement. The estimate is supported by the attached affidavit. As indicated in the affidavit, the cost of overhead structures for the 230kV and 69kV circuits along the railroad route is approximately \$9.1 million. The cost of undergrounding the 230kV circuit is approximately \$33.6 million. This leaves an additional cost for undergrounding, assuming that the existing 69kV circuits remain above ground, of \$24.5 million. Undergrounding the existing 69kV circuit adds approximately \$24.9 to the total cost. Thus the difference between overhead and underground (including undergrounding the two existing 69kV circuits is approximately \$49.4 million.

Also on this point Arizona Communities United suggests that SRP will earn substantial money from a solar power plant interconnected to the Tribal Project. This makes no sense. First, if a solar plant were built, it would be built by the Gila River Indian Community Utility Authority, not SRP. And, even if SRP were to purchase the output, there would be no advantage to using this line over any other possible location for a solar plant. The concept that SRP would somehow make significant profits by locating a solar facility is simply wrong.

Third, undergrounding this portion of the 230kV system would be very unfair to the rest of the communities adjacent to 230kV lines. The SRP system includes 456 miles of existing 230kV circuits (this does not include the 500kV and 69kV circuits). Many of these miles are adjacent to populated areas. None of this is underground. There is nothing compelling about this line that would distinguish it from all of the other above-ground facilities and as such there is no more reason to impose these added costs for underground lines on SRP customers.

SRP also points out that Arizona law provides a mechanism for any community to underground electric lines for their own benefit by forming an underground utility improvement

district. This process is set out in A.R.S. § 48-620 and is available to Arizona Communities United. This statute recognized the fairness concept that other electric customers should not be asked to pay for undergrounding to benefit a particular area.

4. The significant public process included the communities represented by Arizona Communities United.

This filing by Arizona Communities United at this late date is surprising, given the years of public outreach and the numerous opportunities for public comment. The outreach was extensive, involving mailings and meetings with the same groups who now have formed Arizona Communities United.

The private land process formally began in December 2012 as SRP and its consultant, ENValue, LLC, began the public outreach process<sup>4</sup>. The purpose of the public outreach, as in every other siting case, was to engage the community to determine the routes that are most acceptable to the public prior to filing a CEC application. The first step was to form a Community Working Group (CWG), representative of the varied interests in the project.

SRP held open houses at three locations during January 2013 to introduce the project to the residents, business and other stakeholders and to gather input on possible route options. In April 2013, the project team held open houses, again at three locations, to share preliminary proposed route options. SRP hosted a third set of open houses, at three locations in June 2013 to provide information about route segments that had been eliminated via public input.

In the fall of 2013, the project team announced extending the project schedule to allow more time to work with the Gila Community on a possible route alternative on tribal land. Additional communications in early 2014 reiterated SRP's continued work with the Community. In May 2014, the project team announced narrowing of substation sites that allowed further reduction in route alternatives and provided an update on the Community alternative.

<sup>&</sup>lt;sup>4</sup> It is important to note that a public process is not required by the siting statutes.

In July and December 2014, the project team announced it was continuing efforts to develop an alternative transmission line route on the Community land. The project team reported in November and December that schedule extensions were needed to facilitate the efforts.

As SRP was able to secure a route on the Community land, the need for private land routes was significantly reduced and SRP held a fourth and final set of public open houses on February 18 and 19, 2015, to share the final route alternatives with the public. As a result of many of the routes being removed, most members of the public and stakeholders were appreciative that SRP was able to obtain a Community route and not traverse as much private land. Community support included the Chandler and Tempe Chambers of Commerce, the Greater Phoenix Economic Council, the Arizona Technology Council, the Tri-City Baptist Church Ministries and Lawrence & Geyser Development.

Throughout this process, SRP provided a variety of mechanisms to solicit public input and inform the public about the status of the siting process:

- Jurisdictional briefings numerous
- Community Working Group meetings 5
- Public Open House meetings 11
- Stakeholder meetings 41
- Homeowners Association (HOA) requested meetings 29
- Civic and Trade Association presentations 14
- Project E-blast announcements over 27,200 sent
- Project mailings approximately 340,000 mailers sent
- Project website and comment form
- Toll-free project information telephone line

It should be noted that the Pine Lakes Estates HOA (which we understand is the driver of the Arizona Communities United group) both appointed a representative to serve on the CWG and was provided a special community meeting with SRP (on September 24, 2013).

Conclusion 1 2 It is nearly impossible to build a major infrastructure project like the PRC Project and not have any impact at all. Fortunately, the Arizona Siting Statute A.R.S. § 40-360 that guides the 3 Commission's decision does not require that level of perfection. It simply requires as the Siting 4 5 Committee found that the project is in the public interest because "[t]he Project's contribution to meeting the need for an adequate, economical and reliable supply of electric power outweighs the 6 7 minimized impact of the Project on the environment and ecology of the state." The Application 8 by SRP clearly meets this test and we respectfully request the Commission's approval. 9 RESPECTFULLY SUBMITTED this 4<sup>th</sup> day of May, 2015. 10 1000 11 Kenneth C. Sundlof, Jr. 12 One East Washington Street, Suite 1900 Phoenix, Arizona 85004-2554 13 **AND** 14 Robert Taylor 15 Salt River Project Agricultural Improvement and Power District 16 Regulatory Policy PAB 221 17 P.O. Box 52025 Phoenix, Arizona 85072-2025 18 ORIGINAL and twenty-five copies 19 of the foregoing filed this 4th day of May, 2015, with: 20 Arizona Corporation Commission 21 Hearing Division – Docket Control 1200 W. Washington Street 22 Phoenix, Arizona 85007 23 COPY of the foregoing sent via email or Federal Express this 4<sup>th</sup> day of May, 2015, to: 24

John Foreman

Siting Committee

Phoenix, Arizona 85007

1275 W. Washington Street

Arizona Power Plant and Transmission Line

OFFICE OF THE ARIZONA ATTORNEY GENERAL

25

26

1	Joint Oreman Wazag.gov
	Marta T. Hetzer
2	Coash & Coash, Inc. 1802 N. 7th Street
3	Phoenix, AZ 85006
4	mh@coashandcoash.com
	Patrick Black
5	FENNEMORE CRAIG
6	2394 E. Camelback Road, Suite 600 Phoenix, Arizona 85016-3429
7	Attorney for Sun Lakes Community SRP Legal Fund pblack@fclaw.com
8	Jeffrey W. Crockett
9	BROWNSTEIN HYATT FARBER SCHRECK LLP One E. Washington Street, Suite 2400
0	Phoenix, AZ 85004 Attorneys for the City of Chandler
11	jcrockett@bhfs.com
12	Kay Bigelow, City Attorney
	CHANDLER CITY ATTORNEY'S OFFICE P. O. Box. 4008
13	Chandler, AZ 85244-4008
14	kay.bigelow@chandleraz.gov
15	Francis J. Slavin
16	Heather N. Dukes FRANCIS J. SLAVIN, P.C.
	2198 East Camelback Road, Suite 285
17	Phoenix, AZ 85016 Attorneys for Wells Fargo Bank, N.A.
18	service@fjslegal.com
19	1,440
20	By Yhaeilor
21	
22	
23	
24	
25	
26	
/ 11	11

#### BEFORE THE ARIZONA CORPORATION COMMISSION

2

1

COMMISSIONERS
3 SUSAN BITTER SMITH, Chairman

BOB STUMP

4 BOB BURNS TOM FORESE

DOUG LITTLE

6

5

IN THE MATTER OF THE APPLICATION

7 | OF SALT RIVER PROJECT

AGRICULTURAL IMPROVEMENT AND

POWER DISTRICT, IN CONFORMANCE

9 WITH THE REQUIREMENTS OF ARIZONA REVISED STATUTES,

SECTIONS 40-360, et seq., FOR A

CERTIFICATE OF ENVIRONMENTAL

COMPATIBILITY AUTHORIZING THE

| PRICE ROAD CORRIDOR PROJECT, NON-| GILA RIVER INDIAN COMMUNITY

)ss.

PORTION LOCATED IN THE CITY OF

CHANDLER, ARIZONA OR WITHIN

MARICOPA COUNTY.

STATE OF ARIZONA

County of Maricopa

14

10

11

12

13

15

16

17

18

19

20

21

2223

24

25

26

27

Docket No. L-00000B-15-0059-00170

Case No. 170

AFFIDAVIT OF JAMES HUNT IN SUPPORT OF APPLICANT'S RESPONSE TO ARIZONA COMMUNITIES UNITED'S REQUEST FOR REVIEW OF SITING COMMITTEE'S DECISION

JAMES HUNT, being first duly sworn upon his oath, deposes and says:

- 1. I am a Senior Principal Engineer with the Salt River Project. I have over 19 years of experience in transmission engineering, project management, and cost estimation.
- 2. I have been asked to estimate the cost of undergrounding the 230kV circuit from the Schrader Substation to the boundary of the Gila River Indian Community, along what is known as the Railroad Alignment. This is an overall distance of approximately 2.9 miles.
- 3. I estimate the undergrounding costs for the Railroad Alignment, assuming that the existing 69kV circuits remain above ground, to be approximately \$33.6 million. This compares to an overhead cost of about \$9.1 million, for a difference of \$24.5 million.
  - 4. Here are my estimates of the cost of undergrounding per mile:

2500 kcmil segmental copper, cross-linked polyethylene insulation, 2 cables per phase to a the rating of the overhead conductor. Three manufacturers provided budgetary price estimates b. Other materials, with cost per mile in \$ thousands, 6" conduit for the p cable \$165K, conduit spacers \$44K, 4" communications conduit \$36K, cable terminations \$200 (not dependent on line length), splices \$192K, splicing manholes and steel supports \$93K.  c. For the trench, concrete backfill material \$328K/mile.  d. Trenching costs, \$550/foot, which is on the high side of the normal reduct to difficulty working in close proximity to the railroad. Guided bore, probably required road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.  e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million Contingency: \$1.3 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	1 2 3	Engineering 0.3  Materials 4.2  Construction 4.1  Easements <u>1.2</u> SUBTOTAL \$9.8 million	
2500 kcmil segmental copper, cross-linked polyethylene insulation, 2 cables per phase to a the rating of the overhead conductor. Three manufacturers provided budgetary price estimates b. Other materials, with cost per mile in \$ thousands, 6" conduit for the p cable \$165K, conduit spacers \$44K, 4" communications conduit \$36K, cable terminations \$200 (not dependent on line length), splices \$192K, splicing manholes and steel supports \$93K.  c. For the trench, concrete backfill material \$328K/mile.  d. Trenching costs, \$550/foot, which is on the high side of the normal reduct to difficulty working in close proximity to the railroad. Guided bore, probably required road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.  e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million Contingency: \$1.3 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	4	4. Here are the major components of the \$9.8 million estimate:	
the rating of the overhead conductor. Three manufacturers provided budgetary price estimates b. Other materials, with cost per mile in \$ thousands, 6" conduit for the p cable \$165K, conduit spacers \$44K, 4" communications conduit \$36K, cable terminations \$2 (not dependent on line length), splices \$192K, splicing manholes and steel supports \$93K.  c. For the trench, concrete backfill material \$328K/mile.  d. Trenching costs, \$550/foot, which is on the high side of the normal r due to difficulty working in close proximity to the railroad. Guided bore, probably require road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.  e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million Contingency: \$1.3 million/mile (\$15% of the engineering, materials and construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	5	a. Of the materials, the cable by itself costs \$3.2 million per mile. I assur	nec
b. Other materials, with cost per mile in \$ thousands, 6" conduit for the p cable \$165K, conduit spacers \$44K, 4" communications conduit \$36K, cable terminations \$200 (not dependent on line length), splices \$192K, splicing manholes and steel supports \$93K.  c. For the trench, concrete backfill material \$328K/mile.  d. Trenching costs, \$550/foot, which is on the high side of the normal reduce to difficulty working in close proximity to the railroad. Guided bore, probably required road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.  e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million Contingency: \$1.3 million/mile (15% of the engineering, materials and construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	6	2500 kcmil segmental copper, cross-linked polyethylene insulation, 2 cables per phase to ed	ļua
cable \$165K, conduit spacers \$44K, 4" communications conduit \$36K, cable terminations \$20 (not dependent on line length), splices \$192K, splicing manholes and steel supports \$93K.  c. For the trench, concrete backfill material \$328K/mile.  d. Trenching costs, \$550/foot, which is on the high side of the normal reduce to difficulty working in close proximity to the railroad. Guided bore, probably required road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.  e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	7	the rating of the overhead conductor. Three manufacturers provided budgetary price estimates.	
(not dependent on line length), splices \$192K, splicing manholes and steel supports \$93K.  c. For the trench, concrete backfill material \$328K/mile.  d. Trenching costs, \$550/foot, which is on the high side of the normal reduced to difficulty working in close proximity to the railroad. Guided bore, probably required road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.  e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	8	b. Other materials, with cost per mile in \$ thousands, 6" conduit for the po-	wei
c. For the trench, concrete backfill material \$328K/mile.  d. Trenching costs, \$550/foot, which is on the high side of the normal radue to difficulty working in close proximity to the railroad. Guided bore, probably require road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.  e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million construction)  Contingency: \$1.3 million/mile (15% of the engineering, materials and construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	9	cable \$165K, conduit spacers \$44K, 4" communications conduit \$36K, cable terminations \$22	26K
d. Trenching costs, \$550/foot, which is on the high side of the normal reduce to difficulty working in close proximity to the railroad. Guided bore, probably required road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.  e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million.  Contingency: \$1.3 million/mile (15% of the engineering, materials and construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	10	(not dependent on line length), splices \$192K, splicing manholes and steel supports \$93K.	
due to difficulty working in close proximity to the railroad. Guided bore, probably require road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.  e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million.  Contingency: \$1.3 million/mile (15% of the engineering, materials and construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	11	c. For the trench, concrete backfill material \$328K/mile.	
road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.  e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million contingency: \$1.3 million/mile (15% of the engineering, materials and construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	12	d. Trenching costs, \$550/foot, which is on the high side of the normal ra	nge
e. Removal of spoils from trenching \$173K and site restoration \$36K mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million.  Contingency: \$1.3 million/mile (15% of the engineering, materials and construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	13	due to difficulty working in close proximity to the railroad. Guided bore, probably required	l at
mile.  5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million.  Contingency: \$1.3 million/mile (15% of the engineering, materials and construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	14	road crossings, \$1,300/foot. Overall cost for this project \$3.26 million per mile.	
5. To the \$9.8 million per mile undergrounding cost, I then allowed for continger and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million and risk, following sound engineering (15% of the engineering, materials and construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	15	e. Removal of spoils from trenching \$173K and site restoration \$36K	pei
and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million and risk, following sound engineering to \$10.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	16	mile.	
Contingency: \$1.3 million/mile (15% of the engineering, materials and construction)  Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	17	5. To the \$9.8 million per mile undergrounding cost, I then allowed for contingend	cies
20 construction)  21 Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  22 6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  24 7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	18	and risk, following sound engineering practices, bringing the total cost per mile to \$11.6 million	n:
Risk Adjuster: \$0.5 million/mile (\$100K for possible repair of a failed cable, \$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	19	Contingency: \$1.3 million/mile (15% of the engineering, materials and	
\$400K assuming replacement of all cable after 40 years)  6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	20	construction)	
22 6. Therefore, for the 2.9 mile segment at issue, I estimate the undergrounding cost be approximately \$33.6 million.  24 7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	21	· · · · · · · · · · · · · · · · · · ·	
be approximately \$33.6 million.  7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	22	• ,	a to
7. I want to be clear that underground transmission costs are very site specific, that SRP has not done the necessary engineering to determine more precise costs along	23	, , , , , , , , , , , , , , , , , , ,	s 10
that SRP has not done the necessary engineering to determine more precise costs along	24		
26	25	8 · · · · · · · · · · · · · · · · · · ·	
	26	that SRP has not done the necessary engineering to determine more precise costs along t	his
particular alignment.	27	particular alignment.	

- 8. SRP's estimate of the above ground costs is approximately \$4.3 million for construction and \$4.8 million for easements for a total of \$9.1 million. The line construction costs include the removal of the 1.9 miles of double circuit 69kV and the taller poles and foundations to accommodate the 230kV and 69kV circuits on one set of structures.
- Again, I want to emphasize that my undergrounding estimate is only for the 230kV 9. circuit and assumes that the existing 69kV lines are left as is, and that the 230kV undergrounding occurs on the east side of the tracks. Undergrounding the existing 69kV line would add approximately \$24.9 million to the project (2 circuits x 1.9 miles x \$5 million/mile plus \$3 million for ROW and \$2.9 million contingency), for an overall total of \$68.5 million to underground both the 230kV and 69kV circuits. Therefore, the difference in cost between above ground and undergrounding the 230kV and 69kV circuits is \$49.4 million.

Dated this 1st day of May, 2015.

AMES HUNT

Senior Principal Engineer

Notary Public - State of Arizona MARICOPA COUNTY

My Commission Expires
January 28, 2019

Salt River Project

SUBSCRIBED, SWORN TO and ACKNOWLEDGED before me this 2015, by James Hunt. ANGELINA E. BRAVO

My Commission Expires:

28/19

22

23